

**UNIVERSITY DEVELOPMENT LINKAGE PROJECT
ANNUAL ACTIVITY REPORT
OCTOBER 1, 1999 to SEPTEMBER 30, 2000**

Lead Institution: Eastern Washington University
Name of Project Director: Dr. Nancy Todd
E-mail: Nancy.Todd@mail.ewu.edu

Cooperative Agreement: PCE-5063-A-00-3040-00

Grant Web Site: <http://cehd.ewu.edu/cehd/faculty/ntodd/GhanaUDLP/home.html>

EWU/UCC Linkage Profile, 1999 Update:
<http://cehd.ewu.edu/cehd/faculty/ntodd/GhanaUDLP/GhanaEWU.html>

For the most part, activities supporting objectives were completed by spring of 1999 and are well described in the EWU/UCC Linkage Profile Update prepared for the USAID UDLP Conference in Ghana in February 1999 [See link above.]. Since that time, the focus has been on our objective that has addressed the newly developed masters program in biotechnology at the University of Cape Coast. The other continuing activity has been completion of masters' theses for the faculty at the University College of Education at Winneba.

Objective 1: To implement a post-graduate training program which will provide current University of Cape Coast (UCC) faculty with the opportunity to enhance their professional knowledge and skills in fields identified as critical to UCC and to provide focus to the development of master's level education at UCC. Dr. Donald Lightfoot, Director of Biotechnology at Eastern Washington University, has summarized the highlights of this particular program:

This is the final report of progress in the Plant Biotechnology Laboratory development facilitated under the EWU-UCC UDLP collaboration. This particular portion of the linkages project is to develop useful, practical plant biotechnology technology transfer. This cooperative project is the result of equal effort over four years by the UCC Botany faculty and students and by me and my graduate and undergraduate students at Eastern. The goal by which we measure successful technology transfer is to have the UCC Biotechnology laboratory functioning on its own for some years to come in the tissue culture and genetic transformation of cassava plants. With hard work, further funding and some luck, both labs working together hope to develop cassava



Dr. Eric Quaye and Dr. Don Lightfoot

varieties of economic value in Ghana that have increased disease resistance. We will continue the collaboration for years to come.

Mr. Isaac Galyuon, lecturer in Botany, with the support of Dr. Eric Quaye, head of the Botany Department at UCC, is using the 4 year-old plant biotechnology lab at UCC to establish and maintain callus cultures of cassava (*Manihot esculenta*). This small tree is the main starchy food source for 500 million equatorial people world wide. Cassava, also known as manioc and yucca, is possibly the easiest food energy source in the world to cultivate, making it the most available food for the poorest, least nourished people in the tropics. It is also notable that this starchy tuber contains practically no protein, fat or vitamins and thus, leads to enormous deficiencies prior to starvation. It is the source of tapioca starch.

Over the 5+ years of USAID--UDLP funding, faculty and student exchanges and training occurred. Professor Charles Stephens, Lecturer Isaac Galyuon, and Dr. Quaye spent 3 months each in the Biotechnology laboratories of EWU. Dr. Don Lightfoot and undergraduate student Eric Flamoe spent 3 months and 6 months in the Plant Biotechnology laboratory at UCC, respectively. Ms. Kristin Suprak visited the ILTAB laboratory of Dr. Claude Fauquet at Scripps Inst. in San Diego for a few days to learn finer points of tissue culture. Also, Kay Greeson of EWU assisted in the laboratory for 3 weeks, and Dr. Lightfoot revisited the UCC laboratory for 10 days just last August. Dr. Lightfoot taught full, quarter-long undergraduate and graduate classes and trained three graduate students and several undergraduates at UCC. Mr. Flamoe taught an undergraduate class and a laboratory class at UCC for one quarter. Both men helped in the establishment of the UCC Plant Biotechnology Laboratory.

It is important to give most credit for the laboratory and ongoing research to the UCC colleagues. From Vice Chancellor Adjepong, to Dean Carson, and to Botany Chairs Stephens and Quaye, enough money was found to pay for remodeling of the apx. 600 ftsq laboratory and for building equipment and casework suitable for plant tissue culture. This laboratory stands as a testament to these, and the laboratory director Isaac Galyuon's, vision. They chose, after some discussion, to develop cassava for the rural masses in Ghana. They committed valuable laboratory space to the Plant Biotechnology laboratory. They determined the genetic improvement of cassava most valuable in increasing yields and this led to choosing *lipoxygenase* genes as the property to be added to the genome. These colleagues helped design each piece of lab furniture. It is important because these accomplishments were not orchestrated or funded by outsiders such as me. There is a real investment by the UCC botany faculty and administration in the success of the lab to solve indigenous problems that they have identified and by means they have chosen. In order to ensure success in creating improved cassava for Ghana, my laboratory at EWU is vigorously pursuing the same research and cassava development plan as laid out at UCC.

Mr. Galyuon showed cassava tissue culture progress on my visit last August. He had initiated several flasks and several petri plates of cassava callus culture on MS-agar medium. He had clearly validated the cleanliness and workability of the laboratory and the sterile kiosk in which he performs the sterile manipulations necessary for the project. Petri culture plates used to count air-born microbes over a 24 hour period showed the kiosk to be nearly sterile. The tissue culture hood in the kiosk was free of any microbes. I sent and hand carried several living cassava tissue culture samples to UCC in August. All samples arrived in very good shape. This proved that express mail can be used to safely transfer materials between our two laboratories. I also successfully hand carried and delivered the BioRad Helios Gene Gun to the Plant Biotechnology laboratory at UCC. This US\$20,000 gene delivery device will be essential to UCC when adding selected genes to local cultivars of cassava.

During the August visit, from August 9th to August 19th, I presented three campus-wide lectures:

- "The Promise and Means of Biotechnology"
- "The Genetically Modified (GM) Food Debate"
- "The Approach and Methods of the UCC Transgenic Cassava Project"

and created a well attended post seminar discussion. Considering the broader, public issues surrounding GM foods, the design of this cassava improvement project has some features to recommend it. Cassava is a plant not amenable to breeding modes of improvement because most varieties (cultivars) are not interfertile. Cassava cultivars have evolved and have been selected such that they serve very local needs, tastes, and agronomic circumstances and cannot be readily replaced by a universal improved cultivar. Our two laboratories are the only ones to be trying to increase cassava tuber resistance to microbial induced rot of the tuber. The gene being added to cassava in our collaboration is a class called defensin and it produces a protective protein probably already present in cassava at lower levels. Defensins are being developed for broad use in human therapy to fight bacterial infections. The GM food debate does not have such negative connotations in Ghana because starvation is more a problem. Plant improvement through addition of a single protective gene preserves the desirable, culturally selected plant traits far more than does any kind of traditional plant breeding. It appears at this time that the cassava project and the gene addition approach our two labs have chosen are optimal choices and will allow a Ghanaian solution to a Ghanaian agronomic problem.

The future of this USAID-initiated project looks bright. At UCC, Mr. Galyuon has been assigned two full time laboratory technicians. He has attracted a couple of graduate students. The laboratory is used for undergraduate teaching, especially of plant tissue culture procedures and biotechnology. I am committed to provide supplies to the UCC lab as best as I can "borrow" resources from teaching budgets here at EWU. In my laboratories at EWU, there is one full time graduate student and three undergraduates, all very bright, performing all of the project duties. Also, the 6-month long senior biotechnology laboratory class at EWU includes a project for all students in cassava tissue culture. The US Congress OTA and BIO, the national biotechnology association, indicate that there is an under supply of BS scientists trained in plant biotechnology. This project at EWU helps to reduce this deficiency.

The UCC laboratory has initial goals of maintaining sterile cassava cutting cultures of 2 cultivars. They also are maintaining sterile cultures of the all important friable embryogenic callus (FEC) of two cultivars. This is the form of callus needed for gene addition and the form we learned to grow and develop under the tutelage of Drs. Claude Fauquet and Nigel Taylor at ILTAB and the Danforth Plant Laboratory in St. Louis, MO. Mr. Galyuon's near term goal for the laboratory is to initiate sterile culture of several other Ghanaian cultivars. Secondly, he will try to initiate FEC cultures of each.

At EWU we have initial goals of initiating FEC of two added West African cassava cultivars never before grown in that form. We are also trying to develop a much cheaper tapioca starch culture medium to replace the expensive Nobel Agar ingredient. We are also actively improving a very inexpensive biolistic gene gun which we made. We will shortly optimize its use with heavy metal beads coated with the gene and costing 1/40,000 as much as commercial gold beads.

We have contacted and developed working relations with other professionals in support of this cassava development project. Dr. Isao Morishima, at Tottori Univ. in Japan, has agreed to supply us with a proprietary plasmid (set of genes) containing the very practical ones, the

cecropin genes, that may make cassava bacteria resistant. Dr. Maurice Ku of Agronomy at Washington St. Univ. has offered us adequate amounts of a marker gene, normally a proprietary material only licensed out. Dr. Brian Fritzinski in Alberta, Canada, has offered to consult on construction of a new set of genes that will 1) benefit cassava agronomics, and 2) have marker genes to tell us how the plant transformation process is going. Dr. Nigel Taylor at ILTAB has been, and will continue to be, extremely important in guiding us through the 1) tissue culture, 2) the transformation, and 3) the plant regeneration phases of the project. His mentor, Dr. Claude Fauquet is a pioneer and top leader in this field of cassava transformation. Dr. Fauquet and Dr. Richard Goodman of Monsanto Corp. in St. Louis, are considering ways to collaborate and provide some support for this UCC-EWU linkage. Closer to home, Dr. Wm. Ettinger of the Biology Dept. at Gonzaga Univ. in Spokane has been providing constant consulting and tips on the gene cloning issues we run into. Recently we developed a working relation with Dr. Sui-Chang Sun, Director of Research at Jacklin Seed in Post Falls, ID (the world's largest blue grass seed producer and marketer). Dr. Sun assists us on tissue and organ culture and on use of plant hormones in these steps.

A critical future phase is in preparation of useful forms of the defensin gene and gene combinations to be inserted into the cassava tissue. We are designing how to place this gene in plasmids such as the pLAU2-GUS which contains a marker to tell us how well the gene insertion is going. This GUS gene is combined with other markers in a form provided by ILTAB. An excellent graduate student, who just finished 15 months of work on this project, Noah Pefaur, successfully re-engineered this plasmid and used the Helios gene gun in optimizing experiments to successfully insert the gene into cassava FEC.

We are delighted to make this report and to relay so much progress of the UCC-EWU collaboration. Funding is essential for any of this progress. Those who secured and managed the funding deserve enormous credit and our deepest appreciation. Those leaders began with the late Dr. Felix Boateng and include Dr. Nancy Todd, Ms. Ruth Galm, Dr. Charles Stephens, Dr. Eric Quaye and especially Dr. Sam Adjepong. Thank you. But, we are on the hunt for more funds to keep this excellent example of technology transfer going.

Sincerely,

Donald Lightfoot, Ph.D., Associate Professor of Biology
Director of Biotechnology, Eastern Washington University

Objective 4: To implement a 'training of the trainers program' at University College of Education at Winneba.

A group of about twenty faculty at the University College of Education at Winneba began study for a masters program from UCC with the aide of EWU. Several dropped out; a couple of the faculty completed masters programs in Britain or the U. S. that offered financial assistance. Ten masters theses have arrived at EWU to be placed in our university library. These are the abstracts of the papers:

Adi, Daniel Buenortey. *Teacher Knowledge of Klamá Poetry and its Effect on Pupil Academic Performance*.

The purpose of this study was to investigate into Teacher Knowledge of Klama and its effect on pupil performance in Klama poetry. Available statistical data obtained from the West African Examinations Council show that the candidates for the Senior Secondary School Certificate Examination (SSSCE) who take the West African Examinations Council paper on literature with particular reference to Klama poetry have been performing very poorly since the inception of the SSSCE in Ghanaian Languages in 1993.

Factors that might have led to the candidates' failure were identified through a field survey. The lottery method was used to sample nine senior secondary schools and eighteen teachers from the 30 language teachers from the schools sampled from the four Dangme Education Districts for the study through a field survey.

A 50-item teacher Survey Questionnaire was administered to teachers to collect data to find out: 1. The extent of teacher knowledge of Klama poetry, 2. Teachers' methods used in teaching Klama poetry, 3. Extent of Teacher knowledge of the structure of the types of poems and their characteristics. 4. TEacher knowledge of performance of the poems in terms of interpretation and appreciation. 5. Teachers' approach to the appreciation of the poems.

Students also wrote a 40 item 60 minute Klama poetry test.

The major result was that teacher knowledge had no significant relationship to pupil academic performance and the major conclusion was that teachers of Klama poetry needed a peculiar skill and knowledge to be effective in their teaching.

Ali , K. K. Mark. *The Attitude of Teachers and Pupils towards the Use of Dagaare in the Teaching of Cultural Studies in JSS 2*

The purpose of the study was to investigate into the problem of language in the teaching of cultural studies; the attitude of pupils and teachers towards the use of English in the teaching of cultural studies in J. S. S. 2 in the Dagaare-speaking area of the Upper Region of Ghana. The main variables under the study were: 1. The attitude of pupils and teachers towards the use of English in the teaching of cultural studies in J.S.S.2; 2. pupils' and teachers' perception of Dagaare as a more appropriate language in the teaching of cultural studies; and 3. the language pupils and teachers would prefer to be used as a medium of instruction in cultural studies.

The descriptive survey was adopted and covered 231 JSS pupils and 31 teachers of cultural studies, which represented about 30% of the accessible population. The instrument designed for collecting the data was the questionnaire. IT was developed and pre-tested for validation and reliability by the researcher before final administration. In addition, informal interviews and participant observation methods were employed to augment data on the questionnaire. The main statistical tool used in the study was the Chi-square test of goodness of fit, tested to an alpha level of $p < 0.05$.

The main findings of the study were: 1. pupils and teachers had a negative attitude towards the use of English as a medium of instruction in cultural studies. 2. There was no significant difference in attitude between pupils and teachers towards the use of English in the teaching of cultural studies., 3. There was no significant difference between rural and urban respondents in their attitude toward the use of English in the teaching of cultural studies, 4. Both pupils and teachers were likely to perceive Dagaare as the more appropriate language in the teaching of cultural studies., 5. Pupils and teachers in the rural area perceived Dagaare as a more appropriate language in the teaching of cultural studies, while those in the urban areas did not, 6. Both pupils and teachers preferred Dagaare to be used as the medium of instruction in cultural studies, and 7. There was no significant difference between rural and urban respondents with regard to the choice of a language in the teaching of cultural studies.

As a result of these findings, it was strongly suggested by the researcher that the language of instruction in cultural studies needs to be reviewed. That is, cultural studies should be taught in the pupil's first language.

Atteh, Emmanuel. *The impact of the Language Experience Approach in Teaching Reading in Basic Schools: A quasi-experimental study of some selected basic schools in the Aseewa Circuit.*

The purpose of this study was to investigate the impact of the Language Experience Approach (LEA) on reading performance in Dangme of pupils in some selected basic schools in the Aseewa Circuit of the Manya Kroba Education District. The research was motivated by the result of a survey conducted to find out the reading levels or abilities of basic school pupils in the mother tongue in the Aseewa circuit.

The main focus of the project was to ascertain the following: 1. Teacher competency or effectiveness in the use of the approach (LEA) teaching reading in Dangme; 2. The extent to which the LEA has been used to develop reading materials for the pupils; 3. The level of pupils' reading skills development; and 4. Pupils' level of comprehension and word recognition skills development.

The study also compared the basal reading approach, the individualized reading approach, with the language experience approach. A pilot study involving 52 pupils and 2 teachers from 2 schools was conducted to give guidance, purpose and direction to the main study.

One hundred and fifty pupils and four teachers from rural and urban settings were involved in the main study. Identification of reading levels were based on actual reading test designed for word recognition and comprehension. There was also a pre-test and post-test on a selected comprehension passage to test the reading ability of pupils in tests in the LI. Relevant data were gathered from control and experimental groups. The data was used to test and analyze the six null hypotheses formulated using the *z-ratio* and the *t-test* at an alpha level of $P < 0.05$. Recommendations for further research into the area have been made.

Asiamah, S. A. *The Literary Dimensions of Akyem Abuakwa Libation Texts.*

In the traditional society, libation--a form of prayer--permeated the lives of the people and occurred even in their simple everyday activities, such as eating and working. With the advent of modernity, Christianity and other expatriate religions, libation has now been confined to traditional courts and shrines. Outside their context it is only used as part of the activities of national durbars and festivals as though it has no significance to the individual lives.

Libation has been studied by anthropologists, historians, religious philosophers and social scientists who certainly operate from different point of view which are related to their fields. This thesis, however, presents libation as a literary genre. In this attempt, we have looked at such aspects as the performance of libation, the form and structure of libation texts, and also literary and linguistic elements. It is these elements which portray libation--text and performance--as an artistic or aesthetic genre.

The problems and prospects of libation have also been discussed. We have recommended that the impression created by the Christian priests that it is incompatible to christian beliefs, and that it is ungodly, should be reviewed. We have recommended also the study of libation on account of its sociological and pedagogical uses. Libation helps to foster national unity and identify and helps also in linguistic and literary development of the child. In furtherance of the last point, we have recommended that it must be studied at all the levels of the Ghanaian Educational System.

Afari-Twako, K. Henry. *The Relationship of reading ability and Academic Performance: A Case Study of JSS Pupils in Ajumako and Winneba Districts*

Reading ability is very important for pupils academic attainment in school. Success in basic school subjects and in the final end of school examinations depend very much on how well the student can apply reading skills to solve contextual problems. The purpose of this study was to

examine the relationship between reading ability of JSS 1 and 3 pupils and their performance in school subjects. It attempts to establish the extent to which ability to read well in English influences performance in English comprehension, Mathematics and Social Studies in the Junior Secondary School.

The study involved 155 Junior Secondary pupils made up of 84 JSS 1 and 71 JSS 3 pupils from four Junior Secondary Schools from Ajumako and Winneba districts which were labelled rural and urban respectively. The pupils were grouped into reading ability groups of good, average, and poor readers by the use of an Informal Reading Inventory (IRI) designed following the Johnson and Kress IRI. Subjects were asked to read a 150-word passage for the purpose for grouping. Students were also tested in English Comprehension, Mathematics and Social Studies. The reading scores were then used to test for association with their test scores. The Kendalls Correlation Coefficients was used to test for relationships. Also ANOVA was used to compare between the performance of rural and urban JSS pupils.

Findings of the study showed that ability to read is significantly related to academic performance. There was no significant difference between the performance of rural and urban JSS pupils. However there was a significant difference between the reading abilities and academic performance of good, average and poor readers.

Bannerman, Valentina A. *User Education and Information Literacy for Faculty and Students of UCEW: A Case Study.*

The purpose of this study was to do a user needs survey to identify a presumed instructional need and requirement of UCEW faculty and students for information literacy. Also, to draw an outline of a programme, if needed, to portray the role of UCEW library in ensuring that users have the ability to access, evaluate and use information effectively for problem solving and decision making.. The study focused on the level and pattern of library usage and the need for information literacy.

Three hundred and nine students and sixty seven faculty members of UCEW, Winneba campus, formed the sample of the study. A seventeen item questionnaire for faculty and a fifteen item questionnaire for students were used. Four Deans and twelve Heads of Department completed an interview schedule which confirmed the findings of the questionnaire and provided further information for action.

Six hypotheses formulated for the study were subjected to a chi-square (χ^2) test. The result of the study indicate: 1. The level of library use for both faculty and students is quite high; 2. Majority of faculty and students' visits to the library is for use of library resources; 3. Faculty control students' use of the library; 4. Majority of students and a number of faculty members do not use bibliographic tools; 5. Most of the students have no/little knowledge of the use of the library and its' resources; and 6. Most users need guidance in the use of the library and its resources.

The data further revealed that faculty assume students know how to find information in the library and, hence, library research is not taught in a systematic way. They are however, willing to provide time for instruction for themselves and their students. The study indicated a need for a programme and recommends, initially, a point of need instruction to be supplemented with handouts and eventually a handbook.

Hayford, Samuel. *An Evaluation of Vocational Programmes of Public Special Schools for the Mentally Retarded.*

The study was undertaken to evaluate the vocational training of special schools for children with mental retardation in Ghana, and determine how these individuals were being assisted to become productive citizens for the nation. A number of research questions were raised to assess the vocational programmes followed by special schools for individuals with mental retardation, and the number that graduated between 1992-1996.

The descriptive sample survey design was used for the study. The population comprised special education teachers and vocational instructors of special schools for individuals with mental retardation in Ghana. A stratified random sampling technique was used to select four special schools for the survey. Out of a population of forty-five special teachers a sample of thirty-six (80%) was

used. Also, from a population of nine vocational instructors, three (33%) were included in the survey. In addition, fifteen trainees with mental retardation from the four special schools were interviewed.

From the findings, it was established that special schools for individuals with mental retardation concentrated on providing training in five major areas. These were Batik, envelop, and broom making, raising poultry and gardening. Training was carried out mainly in simulated environment such as classrooms. Trainees were not selected by the use of formal vocational assessment tools, neither were they afforded the opportunity to practise in real workshop or integrated settings.

Ocloo, Mark Anthony. *Problems of Low Vision Pupils' Education alongside the Totally Blind in Ghana.*

This research took the form of a descriptive survey and it investigated the learning and social problems of pupils with low vision educated alongside their totally blind counterparts in the mainstream of schools specifically designed for the blind in Ghana. It also investigated whether there were sufficient adapted materials in the schools for the blind for teaching pupils with low vision. This work answered questions relating to the acceptance of braille as a mode of instruction for pupils with low vision.

The research wanted to know whether the pupils with low vision were placed well educationally and whether they accepted and used braille with enthusiasm. The work investigated whether the use of non-visual means of instruction impeded the progress of pupils with limited vision in any way. In order to meet the objectives of this research the researcher used 2 sets of questionnaire and an observation guide and an interview schedule in the collection of data.

From the findings it was established that the majority of the 120 pupils involved in the study had the potential to read, print or large print or benefit from low vision techniques. There were however little or none of such devices in the two schools for the visually impaired. Pupils with low vision were invariably taught as typical blind pupils. Also, majority of the low vision pupils did not accept braille as a mode of instruction and would have preferred to print in any form preferably using optical devices. Furthermore, persons with low vision in the schools for the blind in Ghana did not like the non-visual approach adopted by their teachers during teaching and learning moments.

The researcher recommended that the Ministry of Education should make it a policy that all pupils with low vision should be screened and those that could benefit from visual means of learning are educated alongside their sighted counterparts in the mainstream of the regular school as an ultimate goal. In the interim, these pupils who are already in the Schools for the Blind should be educated in separate classrooms using adequate adapted materials with specialists trained specifically in techniques of low vision care and rehabilitation, and visual skills training. It is recommended among others that government should provide modern adapted materials for the use of pupils with low vision to enable them to be absorbed into the regular schools which can make education more accessible to a large number of such children who are presently not supported in any form in school.

Pratt, Don. *Student Ideas about Heat and Temperature.*

The purpose of the study was to investigate Junior and Senior Secondary School students' understanding of the concepts of heat energy and temperature, whether their conceptions change as they move through the system, and whether female students differ in their conceptions from their counterparts.

Eight students, four males and four females were selected from each class i.e. JS1 through SS3 by purposive sampling. This gave a total sample of forty-eight students, twenty-four males and twenty-four females. The instrument used was an interview schedule developed from topics dealing with the concepts of heat energy and temperature such as their descriptions, applications, effects and differentiation. All the interviews were videotaped and the transcripts analyzed by conceptual inventories, concept maps, frequencies and percentages and chi-square analyses.

The results of the study showed that the students had difficulty understanding the concepts of heat energy and temperature and their differentiation. They were however found to have fewer misconceptions as they moved through the system especially about the applications of the concepts.

The boys had fewer misconceptions in all the items but one, which incidentally had to do with food, than their female counterparts. The differences were however not found to be statistically significant.

The following recommendations were made: 1. The teaching of the concept of heat energy should be preceded by and related to the teaching of the concepts of the particulate nature of matter and the kinetic theory of matter; 2. Teachers should identify students' pre-concepts about topics to be taught to enable them to design appropriate strategies to effect conceptual change; 3. Teachers should adopt the constructivist teaching model of dialogue and experiential learning to effect conceptual changes where necessary; and 4. Remedial interventions such as the STME clinics for girls should be intensified and expanded to improve the performance of girls in science.

Sowah, Collins W. *The Use of Proverbs in Teaching Certain Aspects of the Ewe Language.*

Proverbs belong to antiquity. In the past, they had been used for political, religious and social purposes. In our contemporary world, proverbs have been subjected to academic study. Some scholars were and are concerned with the collection of proverbs. Others are preoccupied with the cultural, oral literature and aspects of proverbs. For a very long time now, the study of proverbs has remained at these levels and therefore have seen no innovations. Moreover, changes have also not occurred in the teaching of proverbs. The consequence of these shortcomings is that the whole discipline becomes static and has seen no forward-march. Furthermore, this phenomenon in the study of proverbs does not encourage language acquisition among teachers and learners in our Junior Secondary Schools. The stagnation or lack of innovations in the advancement of the study of proverbs, in fact, promoted this current research.

The purpose of the research is to show that proverbs, because of their commonness and popularity among language teachers and pupils, can be tapped to teach phonology and syntax of Ewe in particular and other Ghanaian Languages in general. Our contention is that the new innovations will make language teaching and learning easier and therefore enhance the quality of language acquisition in the schools. The innovations are also meant to demonstrate that, similarly, other genres such as riddles, puzzles and stories, for instance, can be treated if the new innovations are successful.

In the light of the innovations, pedagogical strategies based on the physical and social environment of the locality have been evolved to support the innovations in the transmission of the facts of phonology and syntax to the pupils. The innovations themselves are the results of the employment of serious, appropriate and recognisable investigative techniques among pupils, field teachers and student-teachers on the mastery of proverbs and the various ways proverbs are being taught in the schools. In the work itself, owing to limitations of space, many ideas and principles have had to be left out; something I should have liked to touch upon. Other points have had to be barely hinted at in a sentence or flying phrase. Nevertheless, it is to be trusted that enough has been brought together to serve as a stimulus for a more fundamental study of a neglected field.